

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/385,918

DATE: 09/09/1999
TIME: 10:44:30

Input Set: I385918.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

1 <110> APPLICANT: Hoekstra, Merl F.
2 Xie, Weilin
3 Murray, Brion
4 Mercurio, Frank
5 <120> TITLE OF INVENTION: METHODS FOR MODULATING SIGNAL
6 TRANSDUCTION MEDIATED BY TGF-BETA AND RELATED PROTEINS
7 <130> FILE REFERENCE: 860098.433
8 <140> CURRENT APPLICATION NUMBER: US/09/385,918
9 <141> CURRENT FILING DATE: 1999-08-30
10 <160> NUMBER OF SEQ ID NOS: 32
11 <170> SOFTWARE: FastSEQ for Windows Version 3.0
12 <210> SEQ ID NO 1
13 <211> LENGTH: 108
14 <212> TYPE: PRT
15 <213> ORGANISM: Homo sapien
16 <220> FEATURE:
17 <221> NAME/KEY: VARIANT
18 <222> LOCATION: (1)...(1)
19 <223> OTHER INFORMATION: Xaa = Tyrosine or Phenylalanine
20 <220> FEATURE:
21 <221> NAME/KEY: VARIANT
22 <222> LOCATION: (2)...(4)
23 <223> OTHER INFORMATION: Xaa = any amino acid; 0-1 residues may be missing
24 <220> FEATURE:
25 <221> NAME/KEY: VARIANT
26 <222> LOCATION: (6)...(16)
27 <223> OTHER INFORMATION: Xaa = any amino acid; 0-3 residues may be missing
28 <220> FEATURE:
29 <221> NAME/KEY: VARIANT
30 <222> LOCATION: (20)...(20)
31 <223> OTHER INFORMATION: Xaa = any amino acid
32 <220> FEATURE:
33 <221> NAME/KEY: VARIANT
34 <222> LOCATION: (22)...(22)
35 <223> OTHER INFORMATION: Xaa = Valine, Isoleucine or Leucine
36 <220> FEATURE:
37 <221> NAME/KEY: VARIANT
38 <222> LOCATION: (23)...(27)
39 <223> OTHER INFORMATION: Xaa = any amino acid
40 <220> FEATURE:
41 <221> NAME/KEY: VARIANT
42 <222> LOCATION: (29)...(29)
43 <223> OTHER INFORMATION: Xaa = any amino acid
44 <220> FEATURE:

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/385,918DATE: 09/09/1999
TIME: 10:44:30

Input Set: I385918.RAW

45 <221> NAME/KEY: VARIANT
46 <222> LOCATION: (30)...(30) /
47 <223> OTHER INFORMATION: Xaa = Lysine or Arginine
48 <220> FEATURE:
49 <221> NAME/KEY: VARIANT
50 <222> LOCATION: (31)...(33) /
51 <223> OTHER INFORMATION: Xaa = any amino acid
52 <220> FEATURE:
53 <221> NAME/KEY: VARIANT
54 <222> LOCATION: (34)...(34) /
55 <223> OTHER INFORMATION: Xaa = Leucine or Valine
56 <220> FEATURE:
57 <221> NAME/KEY: VARIANT
58 <222> LOCATION: (37)...(37) /
59 <223> OTHER INFORMATION: Xaa = Valine or Leucine
60 <220> FEATURE:
61 <221> NAME/KEY: VARIANT
62 <222> LOCATION: (40)...(40) /
63 <223> OTHER INFORMATION: Xaa = Threonine or Serine
64 <220> FEATURE:
65 <221> NAME/KEY: VARIANT
66 <222> LOCATION: (41)...(41) /
67 <223> OTHER INFORMATION: Xaa = any amino acid
68 <220> FEATURE:
69 <221> NAME/KEY: VARIANT
70 <222> LOCATION: (45)...(45) /
71 <223> OTHER INFORMATION: Xaa = Leucine, Valine, Methionine, Alanine or
72 Isoleucine
73 <220> FEATURE:
74 <221> NAME/KEY: VARIANT
75 <222> LOCATION: (46)...(46) /
76 <223> OTHER INFORMATION: Xaa = any amino acid
77 <220> FEATURE:
78 <221> NAME/KEY: VARIANT
79 <222> LOCATION: (49)...(50) /
80 <223> OTHER INFORMATION: Xaa = any amino acid
81 <220> FEATURE:
82 <221> NAME/KEY: VARIANT
83 <222> LOCATION: (52)...(61) /
84 <223> OTHER INFORMATION: Xaa = any amino acid; 0-6 residues may be missing
85 <220> FEATURE:
86 <221> NAME/KEY: VARIANT
87 <222> LOCATION: (63)...(71) /
88 <223> OTHER INFORMATION: Xaa = any amino acid; 0-2 residues may be missing
89 <220> FEATURE:
90 <221> NAME/KEY: VARIANT
91 <222> LOCATION: (74)...(75) /
92 <223> OTHER INFORMATION: Xaa = any amino acid
93 <220> FEATURE:
94 <221> NAME/KEY: VARIANT

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/385,918

DATE: 09/09/1999
TIME: 10:44:30

Input Set: I385918.RAW

```

95 <222> LOCATION: (81)...(81) ✓
96 <223> OTHER INFORMATION: Xaa = any amino acid
97 <220> FEATURE:
98 <221> NAME/KEY: VARIANT
99 <222> LOCATION: (86)...(86) ✓
100 <223> OTHER INFORMATION: Xaa = any amino acid
101 <220> FEATURE:
102 <221> NAME/KEY: VARIANT
103 <222> LOCATION: (88)...(88) ✓
104 <223> OTHER INFORMATION: Xaa = any amino acid
105 <220> FEATURE:
106 <221> NAME/KEY: VARIANT
107 <222> LOCATION: (90)...(92) ✓
108 <223> OTHER INFORMATION: Xaa = any amino acid
109 <220> FEATURE:
110 <221> NAME/KEY: VARIANT
111 <222> LOCATION: (93)...(93) ✓
112 <223> OTHER INFORMATION: Xaa = Leucine or Methionine
113 <220> FEATURE:
114 <221> NAME/KEY: VARIANT
115 <222> LOCATION: (94)...(95) ✓
116 <223> OTHER INFORMATION: Xaa = any amino acid
117 <220> FEATURE:
118 <221> NAME/KEY: VARIANT
119 <222> LOCATION: (96)...(96) ✓
120 <223> OTHER INFORMATION: Xaa = Arginine or Lysine
121 <220> FEATURE:
122 <221> NAME/KEY: VARIANT
123 <222> LOCATION: (98)...(99) ✓
124 <223> OTHER INFORMATION: Xaa = any amino acid
125 <220> FEATURE:
126 <221> NAME/KEY: VARIANT
127 <222> LOCATION: (102)...(107) ✓
128 <223> OTHER INFORMATION: Xaa = any amino acid; 0-2 residues may be missing
129 <400> SEQUENCE: 1
W--> 130 Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
131 1 5 10 15
W--> 132 Trp Phe Trp Xaa Ile Xaa Xaa Xaa Xaa Xaa Xaa Glu Xaa Xaa Xaa Xaa
133 20 25 30
W--> 134 Xaa Xaa Gln Phe Xaa Thr Gly Xaa Xaa Arg Leu Pro Xaa Xaa Gly Phe
135 35 40 45
W--> 136 Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ile Xaa Xaa
137 50 55 60
W--> 138 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa Xaa His Thr Cys Phe Asn
139 65 70 75 80
W--> 140 Xaa Leu Asp Leu Pro Xaa Tyr Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa
141 85 90 95
W--> 142 Leu Xaa Xaa Ala Ile Xaa Xaa Xaa Xaa Xaa Xaa Phe
143 100 105
144 <210> SEQ ID NO 2

```

PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/385,918DATE: 09/09/1999
TIME: 10:44:30

Input Set: I385918.RAW

145 <211> LENGTH: 33
146 <212> TYPE: PRT
147 <213> ORGANISM: Homo sapien
148 <220> FEATURE:
149 <221> NAME/KEY: VARIANT /
150 <222> LOCATION: (5)...(5)
151 <223> OTHER INFORMATION: Xaa = any amino acid
152 <220> FEATURE:
153 <221> NAME/KEY: VARIANT
154 <222> LOCATION: (9)...(11) /
155 <223> OTHER INFORMATION: Xaa = any amino acid
156 <220> FEATURE:
157 <221> NAME/KEY: VARIANT
158 <222> LOCATION: (12)...(14)
159 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
160 (e.g., S,H,P,D,E,T or Y)
161 <220> FEATURE:
162 <221> NAME/KEY: VARIANT
163 <222> LOCATION: (16)...(16) /
164 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
165 (e.g., S,H,P,D,E,T or Y)
166 <220> FEATURE:
167 <221> NAME/KEY: VARIANT
168 <222> LOCATION: (17)...(17)
169 <223> OTHER INFORMATION: Xaa = any amino acid /
170 <220> FEATURE:
171 <221> NAME/KEY: VARIANT
172 <222> LOCATION: (20)...(20) /
173 <223> OTHER INFORMATION: Xaa = hydrophobic residue (e.g., I,V,L or M)
174 <220> FEATURE:
175 <221> NAME/KEY: VARIANT
176 <222> LOCATION: (21)...(21) /
177 <223> OTHER INFORMATION: Xaa = any amino acid
178 <220> FEATURE:
179 <221> NAME/KEY: VARIANT
180 <222> LOCATION: (25)...(25) /
181 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
182 (e.g., S,H,P,D,E,T or Y)
183 <220> FEATURE:
184 <221> NAME/KEY: VARIANT /
185 <222> LOCATION: (28)...(28)
186 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
187 (e.g., S,H,P,D,E,T or Y)
188 <220> FEATURE:
189 <221> NAME/KEY: VARIANT /
190 <222> LOCATION: (30)...(30)
191 <223> OTHER INFORMATION: Xaa = any amino acid
192 <220> FEATURE:
193 <221> NAME/KEY: VARIANT
194 <222> LOCATION: (31)...(31)

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/385,918

DATE: 09/09/1999
TIME: 10:44:30

Input Set: I385918.RAW

```

195 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
196      (e.g., S,H,P,D,E,T or Y)
197 <220> FEATURE:
198 <221> NAME/KEY: VARIANT
199 <222> LOCATION: (33)...(33)
200 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid
201      (e.g., S,H,P,D,E,T or Y)
202 <400> SEQUENCE: 2
W--> 203 Gly Pro Leu Pro Xaa Gly Trp Glu Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa
204      1 5 10 15
W--> 205 Xaa Tyr Tyr Xaa Xaa His Asn Thr Xaa Thr Thr Xaa Trp Xaa Xaa Pro
206      20 25 30
W--> 207 Xaa
208 <210> SEQ ID NO 3
209 <211> LENGTH: 38
210 <212> TYPE: PRT
211 <213> ORGANISM: Homo sapien
212 <400> SEQUENCE: 3
213 Ser Pro Leu Pro Pro Gly Trp Glu Glu Arg Gln Asp Ile Leu Gly Arg
214      1 5 10 15
215 Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro
216      20 25 30
217 Thr Pro Gln Asp Asn Leu
218      35
219 <210> SEQ ID NO 4
220 <211> LENGTH: 38
221 <212> TYPE: PRT
222 <213> ORGANISM: Homo sapien
223 <400> SEQUENCE: 4
224 Ser Gly Leu Pro Pro Gly Trp Glu Glu Arg Gln Asp Ile Leu Gly Arg
225      1 5 10 15
226 Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro
227      20 25 30
228 Thr Pro Gln Asp Asn Leu
229      35
230 <210> SEQ ID NO 5
231 <211> LENGTH: 38
232 <212> TYPE: PRT
233 <213> ORGANISM: Homo sapien
234 <400> SEQUENCE: 5
235 Gly Phe Leu Pro Lys Gly Trp Glu Val Arg His Ala Pro Asn Gly Arg
236      1 5 10 15
237 Pro Phe Phe Ile Asp His Asn Thr Lys Thr Thr Thr Trp Glu Asp Pro
238      20 25 30
239 Arg Leu Lys Ile Pro Ala
240      35
241 <210> SEQ ID NO 6
242 <211> LENGTH: 38
243 <212> TYPE: PRT
244 <213> ORGANISM: Homo sapien

```

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Input Set: I385918.RAW

Line	? Error/Warning	Original Text
130	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa X
132	W "N" or "Xaa" used: Feature required	Trp Phe Trp Xaa Ile Xaa Xaa Xaa Xaa Xaa X
134	W "N" or "Xaa" used: Feature required	Xaa Xaa Gln Phe Xaa Thr Gly Xaa Xaa Arg L
136	W "N" or "Xaa" used: Feature required	Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa X
138	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa X
140	W "N" or "Xaa" used: Feature required	Xaa Leu Asp Leu Pro Xaa Tyr Xaa Ser Xaa X
142	W "N" or "Xaa" used: Feature required	Leu Xaa Xaa Ala Ile Xaa Xaa Xaa Xaa Xaa X
203	W "N" or "Xaa" used: Feature required	Gly Pro Leu Pro Xaa Gly Trp Glu Xaa Xaa X
205	W "N" or "Xaa" used: Feature required	Xaa Tyr Tyr Xaa Xaa His Asn Thr Xaa Thr T
207	W "N" or "Xaa" used: Feature required	Xaa
338	W "N" or "Xaa" used: Feature required	Pro Pro Xaa Tyr
353	W "N" or "Xaa" used: Feature required	Xaa Pro Pro Pro Xaa Tyr
371	W "N" or "Xaa" used: Feature required	Pro Ala Asp Thr Pro Pro Pro Ala Tyr Xaa P
389	W "N" or "Xaa" used: Feature required	Thr Pro Pro Pro Gly Tyr Xaa Ser Glu Asp G